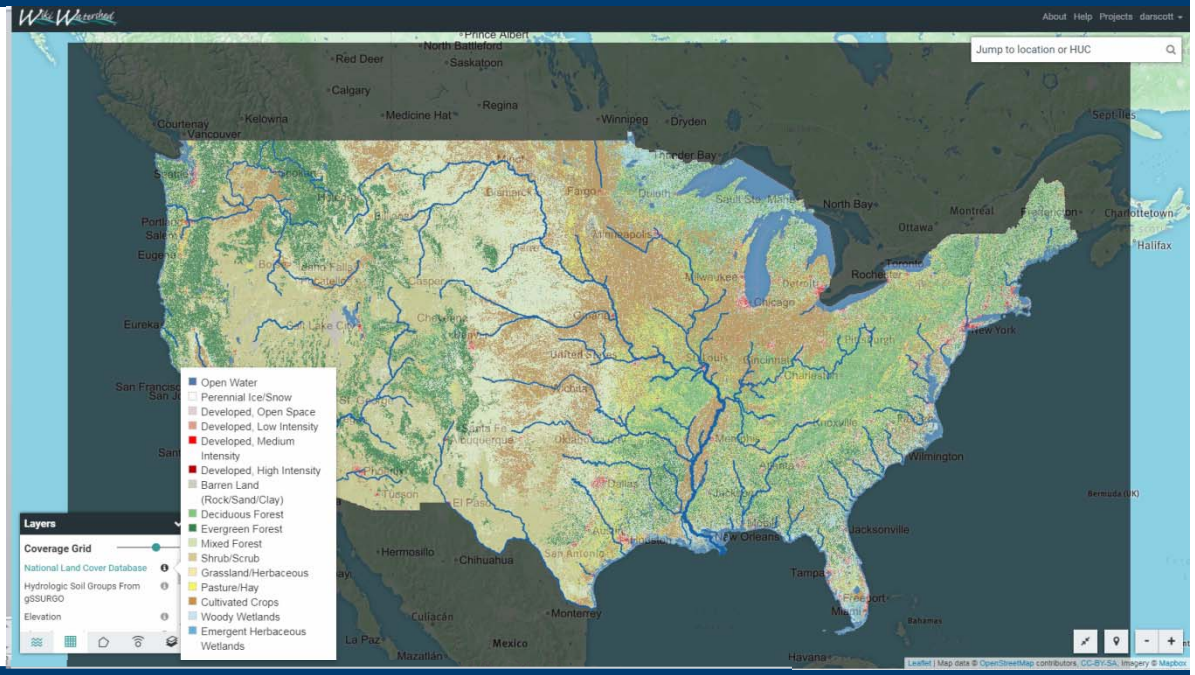
WikiWatershed®: An online toolkit for water resource managers, conservation practitioners, and municipal decision-makers

Dave Arscott, Ph.D.
Executive Director, Research Scientist

STROUD WATER RESEARCH CENTER

Development Team:
Drexel/ANS, LimnoTech, PSU, UW, USU, Azavea



WikiWatershed®

WikiWatershed®

Team Members

David Arscott, Steve Kerlin, Melinda Daniels,
Matt Ehrhart, Susan E. Gill (retired)

Anthony Aufdenkampe, LimnoTech
Barry Evans, Penn State U., Stroud Center
David Tarboton, Utah State U.
Jeffrey S. Horsburgh, Utah State U.
Scott Haag, Academy Nat. Sci., Drexel U.
Robert Cheetham, Azavea
Emilio Mayorga, U. Washington

Nanette Marcum-Dietrich, Millersville U.
Carolyn Staudt, Concord Consortium

STROUD WATER RESEARCH CENTER

LimnoTech Water Environment | Scientists Engineers

azavea

THE ACADEMY OF NATURAL SCIENCES of DREXEL UNIVERSITY

UNIVERSITY of WASHINGTON

UtahState University

Millersville University SEIZE THE OPPORTUNITY

The Concord Consortium

WikiWatershed®

Funding from:

- William Penn Foundation
- NSF DRK12 Grant No. DRL- 1418133 “Teaching Environmental Sustainability - Model My Watershed” 4-year Project
- Past NSF Grant: DRL #0929763
- Stroud Water Research Center
- Virginia Wellington Cabot Foundation
- The Dansko® Foundation
- Generous donations from Peter Kjellerup and Mandy Cabot

STROUD WATER RESEARCH CENTER

WILLIAM PENN FOUNDATION

NSF National Science Foundation WHERE DISCOVERIES BEGIN

WikiWatershed®

What is WikiWatershed®?

A web toolkit to support citizens, conservation practitioners, municipal decision-makers, researchers, educators, students to collaboratively advance knowledge and stewardship of our environment and fresh water.

Stroud Water Research Center 50 Years Est. 1967

WikiWatershed® *Current and Developing Resources*

Model My Watershed®– Watershed-modeling Web app to analyze real geo-data, model storms and compare conservation or development scenarios in your watershed.

Monitor My Watershed® –Web-based interactive map for discovery, visualization, and sharing of data and resources to assist monitoring using low-cost approaches.

- **Runoff Simulation**– Animated learning tool for Model My Watershed.
- **EnviroDIY™** – Community of do-it-yourself enthusiasts sharing open-source ideas for environmental science and monitoring.
- **Leaf Pack Network®** - International network of stream macroinvertebrate monitoring data and educational resources.
- **Water Quality App™** - Data collection tool for tablets and smartphones for chemical, physical, and macroinvertebrate monitoring data. Includes digital field guide for macroinvertebrates and learning tools for other measurements. Available from Google Play and iTunes.

STROUD WATER RESEARCH CENTER 50 YEARS Est. 1967

WikiWatershed®

Today's highlights

Monitor My Watershed® –Web-based interactive map for discovery, visualization, and sharing of data and resources to assist monitoring using low-cost approaches.

Model My Watershed®

- Where do find technical documentation?
- What is HydroShare and how do I connect and use it with Model My Watershed?
- How do I access the "hot-spot" view modeling feature (i.e., Stream Reach Assessment Tool)
- How do I change units from metric to US customary
- Examples
  - Build a scenario for estimating open-space preservation impact on storm run-off

STROUD WATER RESEARCH CENTER 50 YEARS Est. 1967

WikiWatershed® *Current and Developing Resources*

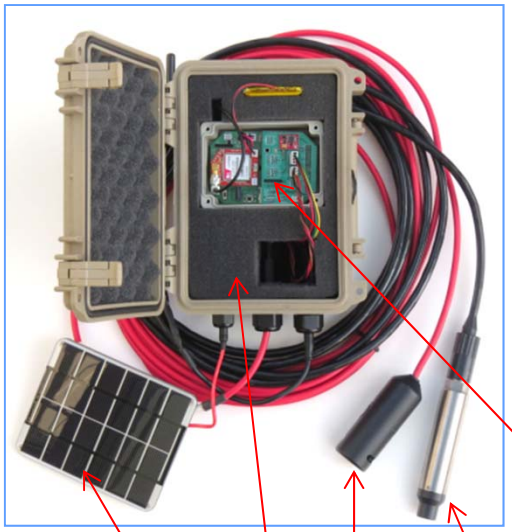
Model My Watershed®– Watershed-modeling Web app to analyze real geo-data, model storms and compare conservation or development scenarios in your watershed.

Monitor My Watershed® –Web-based interactive map for discovery, visualization, and sharing of data and resources to assist monitoring using low-cost approaches.

- **Runoff Simulation**– Animated learning tool for Model My Watershed.
- **EnviroDIY™** – Community of do-it-yourself enthusiasts sharing open-source ideas for environmental science and monitoring.
- **Leaf Pack Network®** - International network of stream macroinvertebrate monitoring data and educational resources.
- **Water Quality App™** - Data collection tool for tablets and smartphones for chemical, physical, and macroinvertebrate monitoring data. Includes digital field guide for macroinvertebrates and learning tools for other measurements. Available from Google Play and iTunes.

STROUD WATER RESEARCH CENTER 50 YEARS Est. 1967

EnviroDIY Sensor Station



Solar panel

Logger box

Decagon CTD-10 sensor – Conductivity, Temperature, Depth

Mayfly data logger board

Campbell OBS-3+ Turbidity sensor

Full station – sensors and logger box with solar panel

Solar panel and logger box

Sensor bundle (sensors, hose clamp, PVC sheath, mounting pin)

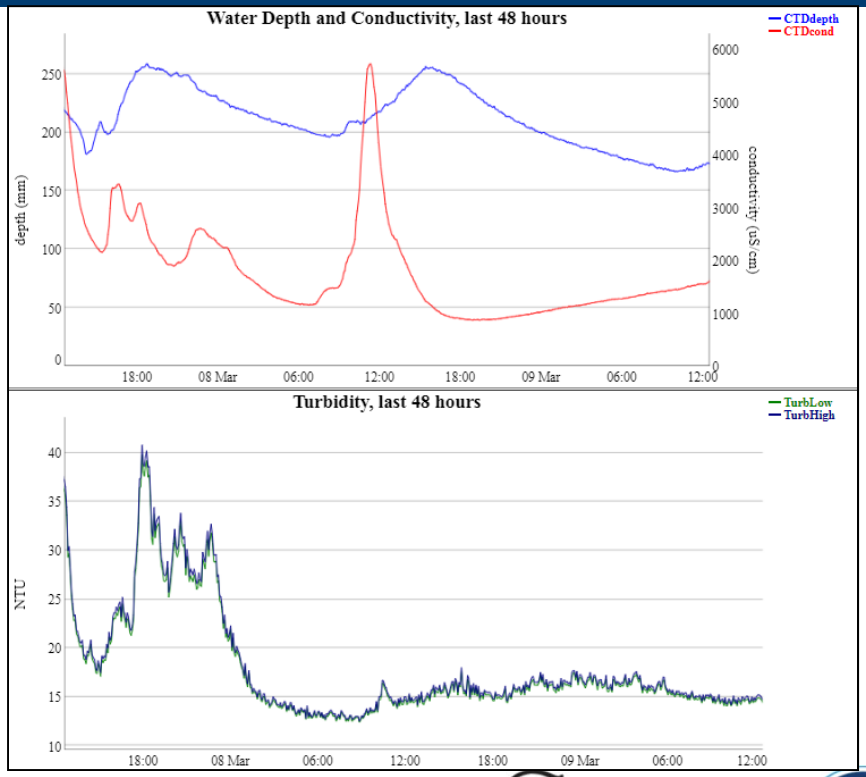
Mounting pin – remove to take sensor bundle out of stream

Staff gauge – for on-site reference and use in developing hydrologic rating curves

EnviroDIY Sensor Station

Campbell OBS3+ Turbidity sensor

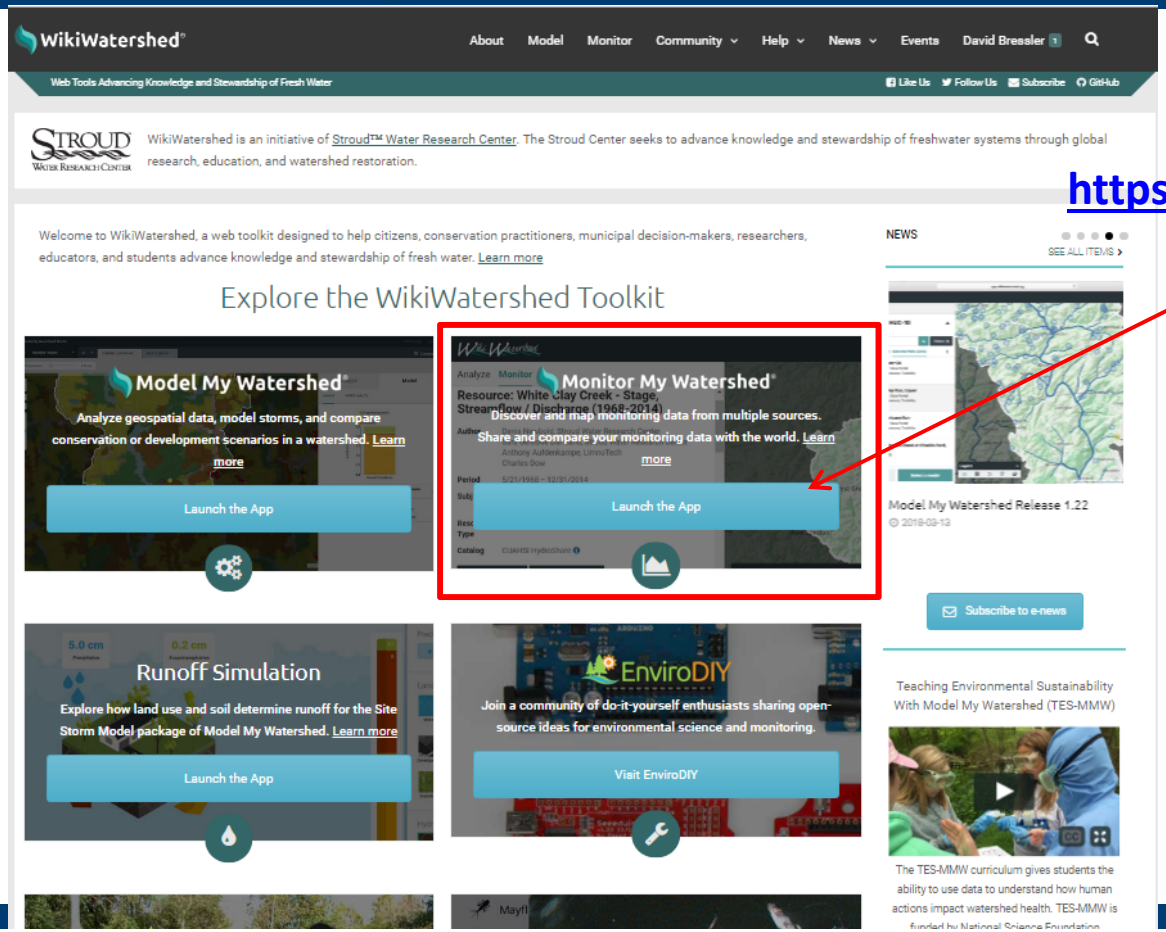
Meter Hydros 21 CTD sensor (formerly Decagon CTD-10)



STROUD WATER RESEARCH CENTER

50 YEARS Est. 1967

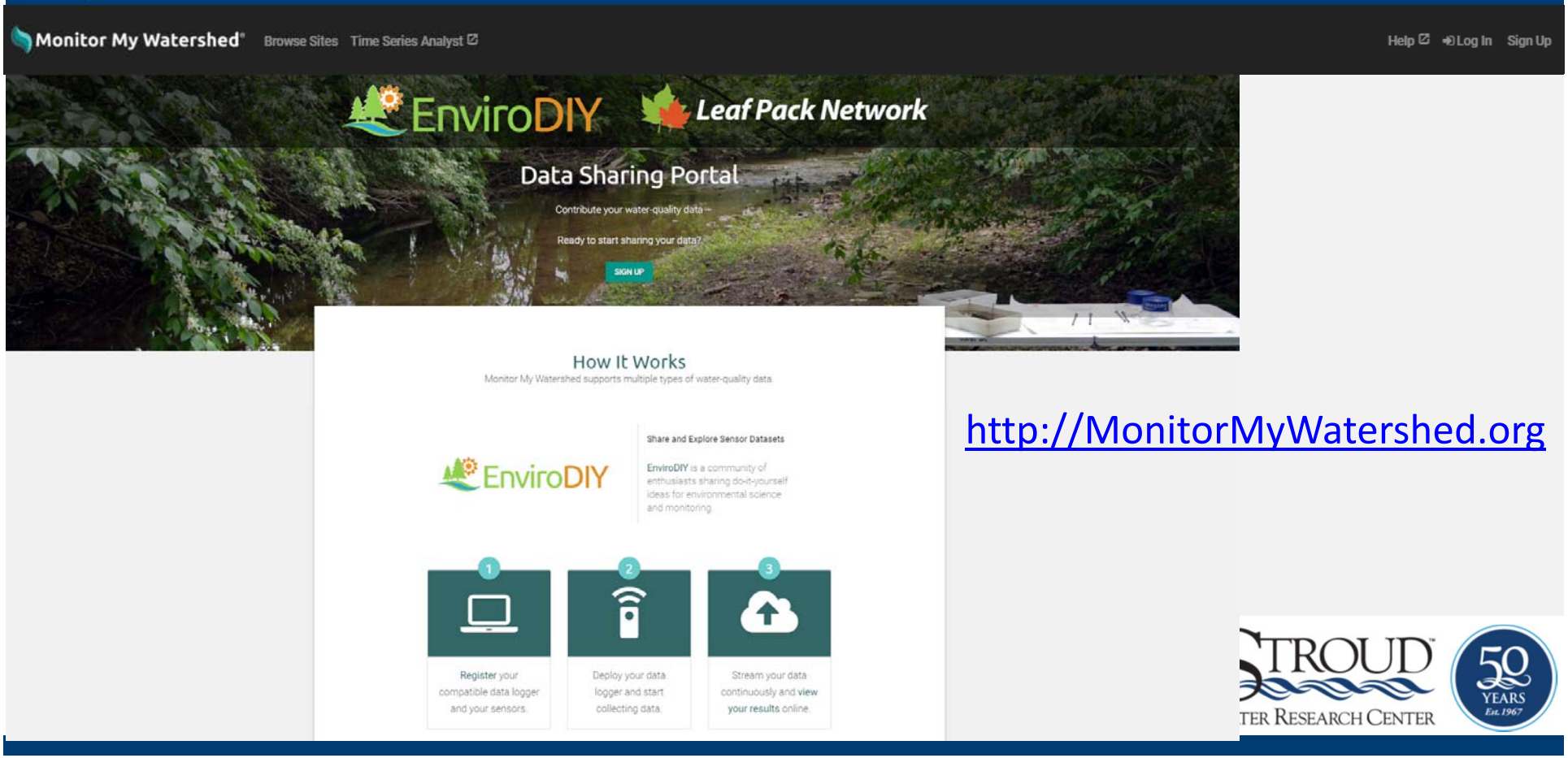
WikiWatershed®



https://MonitorMyWatershed.org

STROUD WATER RESEARCH CENTER
50 YEARS Est. 1967

Monitor My Watershed® for EnviroDIY



http://MonitorMyWatershed.org

STROUD WATER RESEARCH CENTER
50 YEARS Est. 1967

Monitor My Watershed® for EnviroDIY

Monitor My Watershed | Browse Sites | Time Series Analyst | Help | Log In | Sign Up

Register a Site

Site Code

Site Name

Site type

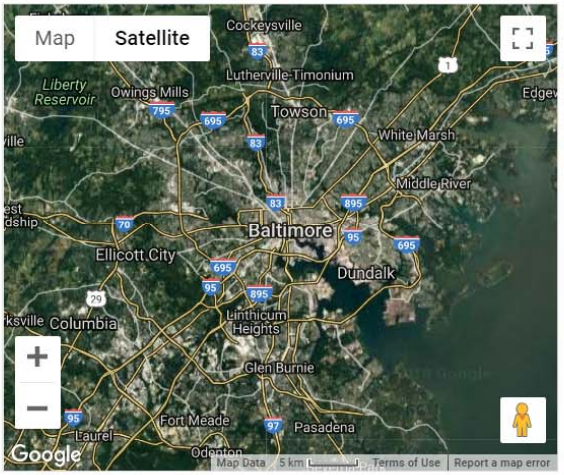
Stream

Stream name (optional)

Major watershed (optional)

Sub basin (optional)

Closest town (optional)



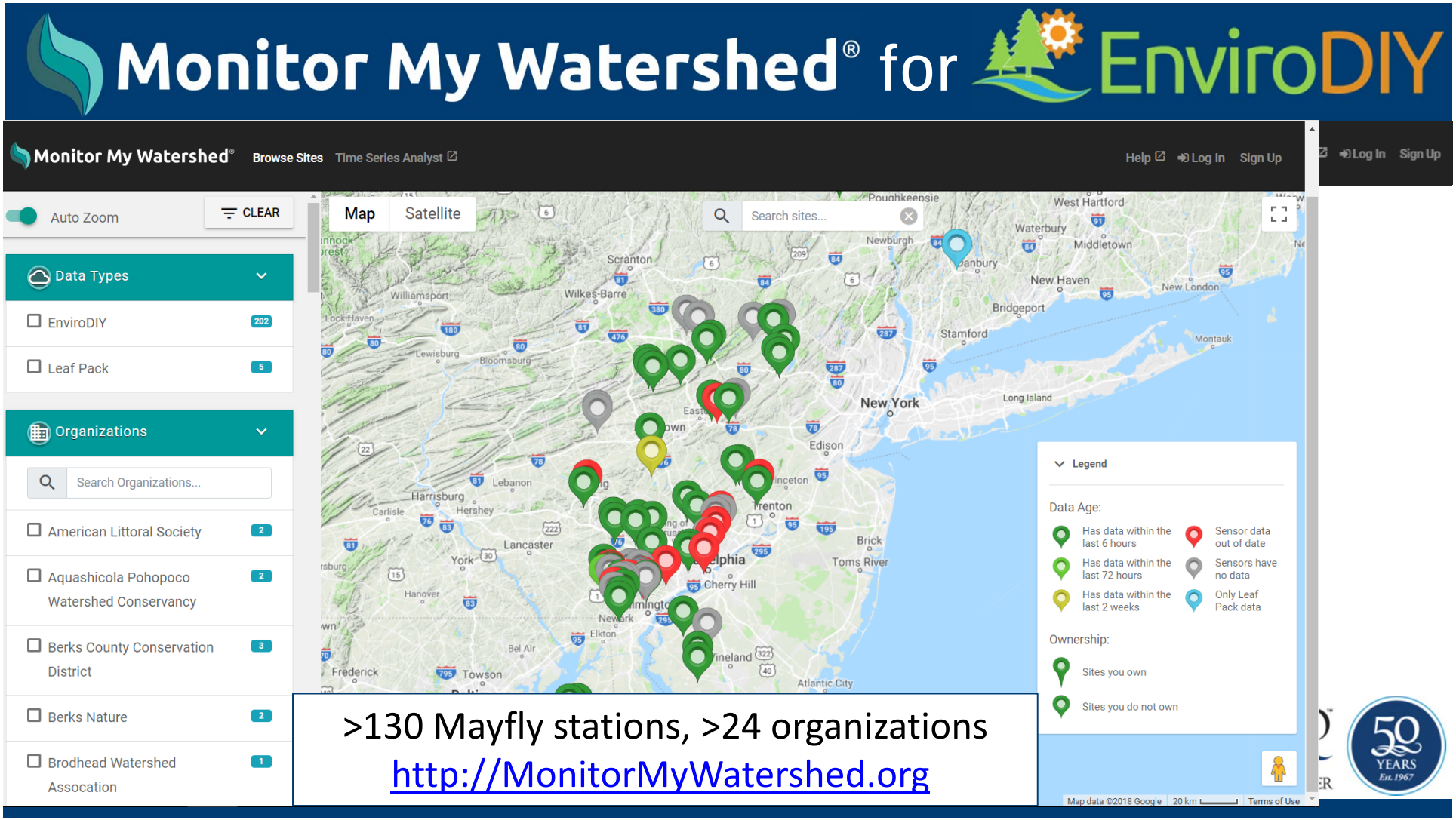
Click on the map to update coordinates and elevation data.

Latitude

Longitude

Elevation (optional)

Elevation datum (optional)


Monitor My Watershed® for EnviroDIY
Monitor My Watershed
Browse Sites
Time Series Analyst
Help
Log In
Sign Up
Auto Zoom
CLEAR
Data Types
EnviroDIY 202
Leaf Pack 5
Organizations
Search Organizations...
American Littoral Society 2
Aquashicola Pohopoco Watershed Conservancy 2
Berks County Conservation District 3
Berks Nature 2
Brodhead Watershed Assocation 1
Map
Satellite
Search sites...
Legend
Data Age:
Has data within the last 6 hours
Has data within the last 72 hours
Has data within the last 2 weeks
Sensor data out of date
Sensors have no data
Only Leaf Pack data
Ownership:
Sites you own
Sites you do not own
Map data ©2018 Google
20 km
Terms of Use
>130 Mayfly stations, >24 organizations
http://MonitorMyWatershed.org
50 YEARS Est. 1967

Monitor My Watershed® for EnviroDIY

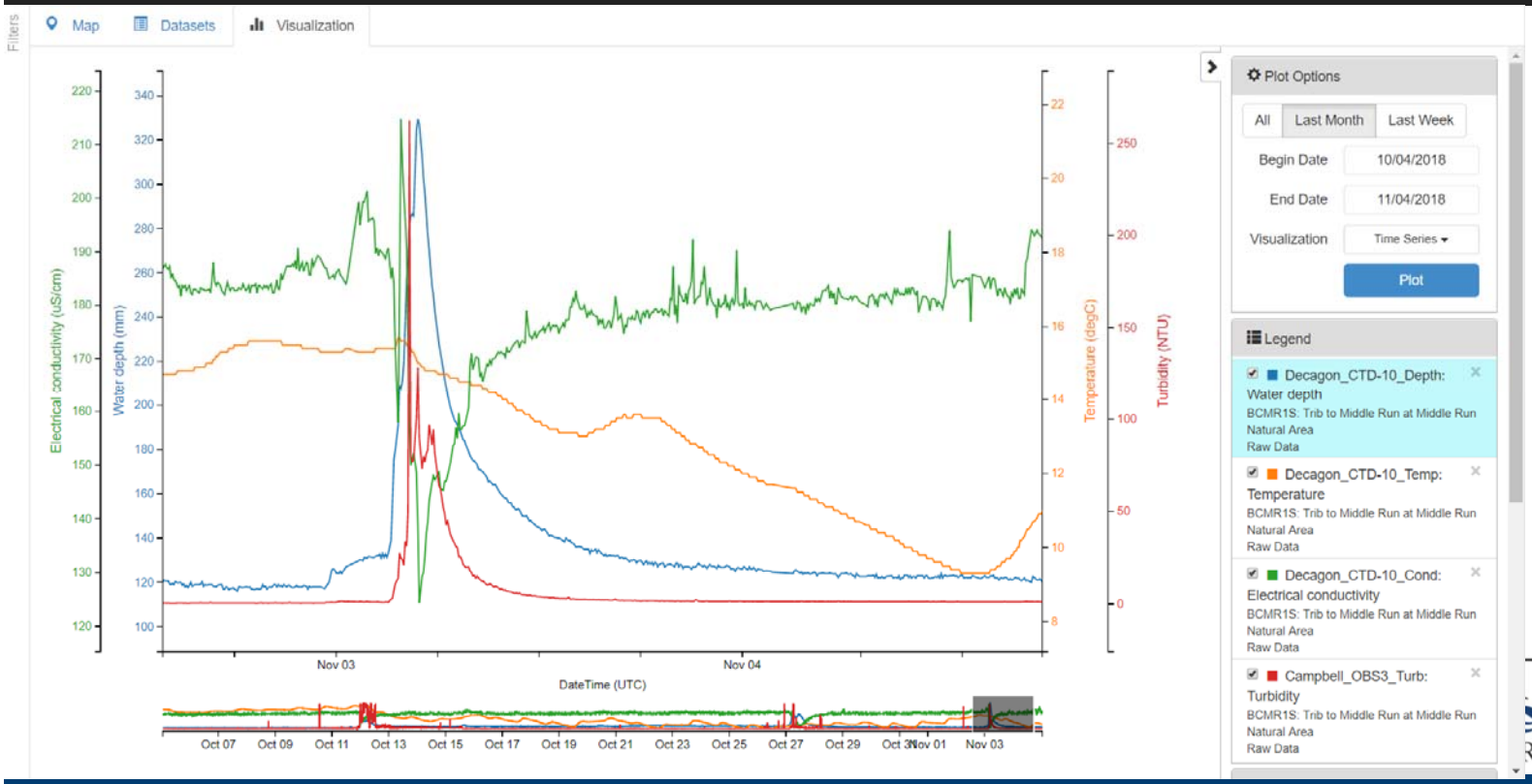
Monitor My Watershed® My Sites Browse Sites Time Series Analyst Help Logged in as darscott

Trib to Middle Run at Middle Run Natural Area (BCMR1S)

☐ Follow

Deployment By	Shane Morgan
Organization	White Clay Wild & Scenic River Program
Registration Date	May 21, 2018, 3:03 p.m.
Deployment Date	April 20, 2018, 10:35 a.m.
Latitude	39.719729
Longitude	-75.729707
Elevation (m)	61.0
Elevation Datum	-
Site Type	Stream
Stream Name	-

Monitor My Watershed® for EnviroDIY



TROUD RESEARCH CENTER

50 YEARS Est. 1967

WikiWatershed® *Current and Developing Resources*

Model My Watershed®– Watershed-modeling Web app to analyze real geo-data, model storms and compare conservation or development scenarios in your watershed.

Monitor My Watershed® –Web-based interactive map for discovery, visualization, and sharing of data and resources to assist monitoring using low-cost approaches.

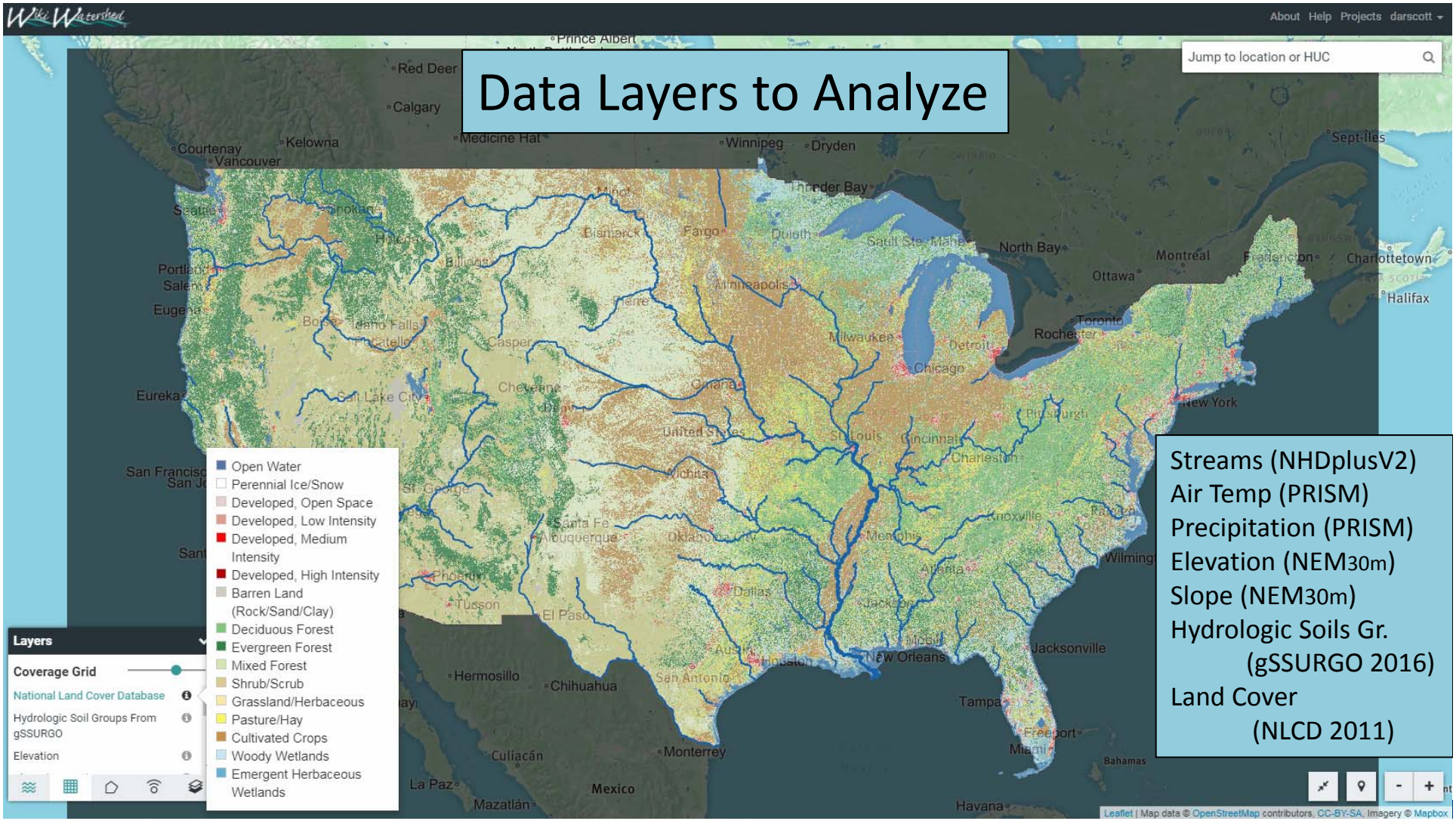
- **Runoff Simulation**– Animated learning tool for Model My Watershed.
- **EnviroDIY™** – Community of do-it-yourself enthusiasts sharing open-source ideas for environmental science and monitoring.
- **Leaf Pack Network®** - International network of stream macroinvertebrate monitoring data and educational resources.
- **Water Quality App™** - Data collection tool for tablets and smartphones for chemical, physical, and macroinvertebrate monitoring data. Includes digital field guide for macroinvertebrates and learning tools for other measurements. Available from Google Play and iTunes.

STROUD WATER RESEARCH CENTER 50 YEARS Est. 1967

What is Model My Watershed® ?

Vision: provide an easy-to-use pro-grade modeling package to inform land-use decisions, support conservation practices, & enhance watershed education.

FREELY AVAILABLE AT http://WikiWatershed.org


Data Layers to Analyze
About Help Projects darscott
Jump to location or HUC
Layers
Coverage Grid
National Land Cover Database
Hydrologic Soil Groups From gSSURGO
Elevation
Open Water
Perennial Ice/Snow
Developed, Open Space
Developed, Low Intensity
Developed, Medium Intensity
Developed, High Intensity
Barren Land (Rock/Sand/Clay)
Deciduous Forest
Evergreen Forest
Mixed Forest
Shrub/Scrub
Grassland/Herbaceous
Pasture/Hay
Cultivated Crops
Woody Wetlands
Emergent Herbaceous Wetlands
Streams (NHDplusV2)
Air Temp (PRISM)
Precipitation (PRISM)
Elevation (NEM30m)
Slope (NEM30m)
Hydrologic Soils Gr. (gSSURGO 2016)
Land Cover (NLCD 2011)
Leaflet | Map data © OpenStreetMap contributors, CC-BY-SA, Imagery © Mapbox

WikiWatershed® Acknowledgments

Funding from:

- William Penn Foundation, Delaware River Watershed Initiative
- NSF DRK12 Grant No. DRL- 1418133 “Teaching Environmental Sustainability - Model My Watershed” 4-year Project
- Past NSF Grant: DRL #0929763
- Stroud Water Research Center
- Virginia Wellington Cabot Foundation
- The Dansko® Foundation
- Generous donations from Peter Kjellerup and Mandy Cabot

STROUD WATER RESEARCH CENTER

National Science Foundation
WHERE DISCOVERIES BEGIN

WILLIAM PENN FOUNDATION

Feedback

- What was the most important take away from today's presentation?
- From what you heard about Model My Watershed, what would you most like to learn more about?

STROUD WATER RESEARCH CENTER 50 YEARS Est. 1967